MGW 2000e

MPEG-2 Video Streaming Server

(Version 4.0)

Quick Start Guide

optibase

Safety Instructions

Use the following safety guidelines to help protect your MGW 2000e unit from potential damage and to ensure your own personal safety.

When using MGW 2000e

As you operate MGW 2000e, observe the following safety guidelines

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Note

Do not open the MGW 2000e unit, as this will void your warranty. MGW 2000e does not contain any user serviceable parts.

- Before installing MGW 2000e, unplug the system to help prevent electric shock or system board damage. Certain system board components continue to receive power any time MGW 2000e is connected to AC power.

- To help prevent electric shock, plug the power cable into properly grounded sources. Use only properly grounded extensions and adaptors as the need arises.

- Use only a UL Recognized power cord.

- Make sure nothing rests on your MGW 2000e power cable and that the cables are not located where they can be stepped or tripped over.

- Do not spill food or liquids on your MGW 2000e unit.

- Do not push any objects into free slots of your MGW 2000e unit. Doing so will damage your MGW 2000e unit and can cause fire or electrical shock by shorting out interior components.

- Keep your MGW 2000e unit away from radiators and heat sources. Also, do not block cooling vents. Avoid placing loose papers underneath your MGW 2000e unit. Do not place your MGW 2000e unit in a closed-in wall unit or on a bed, sofa, or rug.

- When you disconnect a cable, pull on its connector or on its strain relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, make sure both connectors are correctly oriented and aligned.

- **ESD Warning**: Normal handling precautions should be taken to avoid static discharge.

MGW 2000e Overview

MGW 2000e transmits multiple channels of live TV and video over IP networks. It can receive up to six live analog signals, encode them in real-time to MPEG-1 or MPEG-2 and then stream them over an IP network in multicast or unicast mode. With MGW 2000e, organizations can utilize their IP networks for business TV, training and corporate communications.

MGW 2000e encodes, multiplexes and transmits up to 6 live MPEG-2 and MPEG-1 streams.

A Web-based remotely controlled management application lets you configure, control and operate multiple streams.

MGW 2000e ships with two network interface cards (NIC) enabling you to transmit streams over one NIC and use the second one to configure and operate MGW 2000e.

This guide instructs you on how to connect MGW 2000e to a network and initialize for the first use. It also guides you in encoding one live channel from an analog or digital source with pre-set default parameters.

Detailed instructions on setting streaming and encoding parameters can be found in the user manual.

MGW 2000e Components

Chassis Components	Description
MGW 2000e chassis	'Housing' of the MGW 2000e system.
Power cord that fits your local Din socket.	Connects to MGW 2000e's power connector **(not supplied by Optibase)**.
Network cables - shielded category 5	Connect MGW 2000e's NICs A and B to two different network segments **(not supplied by Optibase)**.
19", 23" or ETSI mounted bracket	Rack-mounts MGW 2000e.
RS-232 cable	Connects PC to MGW 2000e.
USB disk	The USB disk is optional. It connects to MGW 2000e and provides space to store video clips **(not supplied by Optibase)**.

Encoding Modules	Description
MGE-100	Encodes video from Composite and S-Video sources at SIF and QSIF resolutions and audio from unbalanced audio sources.
MGE-200 FD1 720	Encodes video from Composite and S-Video sources at SIF, QSIF, HD1 2/3 D1, 3/4 D1 and FD1 resolutions and audio from unbalanced sources.
MGE-200D FD1 720	Like MGE-200 FD1 720, but encodes SDI video sources and unbalanced and AES3 sources.
MGE-200 Low Latency	Supports Optibase's low latency optimized microcode for encoding at a reduced latency.

Encoding Module Components	Description
Video BNC cable	Connects a Composite or SDI source.
S-Video MiniDIN cable	Connects an S-Video source.
Audio Stereo MiniJack cable	Connects an unbalanced source.
RCA Coaxial cable	Connects an AES3 source.

Table 1: MGW 2000e Components

Getting Started

This section describes how to unpack and initialize MGW 2000e. It instructs you on encoding and transmitting a UDP stream under default conditions by using one encoding module and MGW 2000e Director.

For instructions on encoding and transmitting RTP streams, refer to the user manual.

Unpacking MGW 2000e

1. Choose a dry location for MGW 2000e, which complies with the requirements regarding temperature specified in the user manual.

2. Unpack MGW 2000e and its components carefully and make sure that you have all the required components available.

3. Desk-mount or rack-mount MGW 2000e.

Power Supply

MGW 2000e operates at 90/260V AC. The power cord connects to the power connector on MGW 2000e's rear panel. MGW 2000e recognizes your local voltage automatically.

MGW 2000e does not ship with a power cord. You will have to purchase a power cord that fits your local DIN socket.

Installing an Encoding Module in MGW 2000e

Before you start operating MGW 2000e, you have to install one of the encoding modules listed in Table 1.

For instructions on installing encoding modules, refer to chapter 2 in the user manual.

For tables showing where to connect sources, refer to page 17.

User Authorization

MGW 2000e operates from two user platforms. Table 2 illustrates their access authorization and the tasks they can perform. For additional tasks performed by the users, refer to the user manual.

User	Password	Task	Remarks
Administrator	Administrator	Initializes MGW 2000e via HyperTerminal from a separate PC.	Connects via RS-232.
		Configures MGW 2000e via Telnet from a PC in the network.	Connects through the network
		Operates MGW 2000e using MGW 2000e Director.	Connects through the network.
MGW2000Guest	--	Views the configuration using MGW 2000e Director and previews content that is being encoded.	Connects through the network.

<div align="center">Table 2: MGW 2000e's User Profile</div>

<div align="center">Note</div>

- Disconnect the power cable from the power connector prior to performing any task on the MGW 2000e unit.

- Avoid touching inside free slots as this may cause electrical hazards. Touching inside free slots may also damage your MGW 2000e unit.

Initial Configuration

To operate MGW 2000e for the first time, you have to initialize MGW 2000e using HyperTerminal, which is pre-installed on the Configuration PC.

The Configuration PC must have at least one free serial port. To enable the Configuration PC to communicate with MGW 2000e, you have to first add a direct network connection and a HyperTerminal connection.

You may add and configure conections manually or use pre-configured configuration files available on the MGW 2000e CD.

- To use pre-configured configuration files, refer to the next page.

- To add the required connections manually, refer to the user manual.

Before you initialize MGW 2000e:

1. To avoid network conflicts, make sure that no other network device with the hostname **MGW2000E** is connected to the network.

2. Use a serial cable to connect MGW 2000e's RS-232 port to a free serial port (e.g. COM1) on the Configuration PC.

3. Use a network cable to connect MGW 2000e's NIC A to the network.

   - To connect NIC B as well, refer to the user manual for further information and instructions.

Note

To ensure proper network communication, we recommend using shielded Category 5 network cables.

To add the required connections:

1. Insert the MGW 2000e CD and navigate to the HyperTerminal Settings folder.

2. Copy **rasphone.pbk** to
   C:\Documents and Settings\All Users\Application Data\Microsoft\Network\Connections\Pbk
   on your PC. If Windows is not installed on **C**, specify the correct drive.

3. Restart your PC; the direct connection, called **2000e Direct Connection**, is available under **Network Connections** in the Control Panel. We recommend creating a shortcut on the Desktop.

4. Use a serial cable and connect one end to the RS-232 connector and the other end to the Configuration PC's COM1 port.

5. Copy **2000e.ht** to a local folder on your PC and create a shortcut on the Desktop.

6. Double-click **2000e Direct Connection** , enter the user name and the password for MGW 2000e's Administrator user and click **Connect**.

7. Double-click **2000e.ht** ; HyperTerminal appears with the MGW 2000e's Logon prompt.

To initialize MGW 2000e

1. Log on as **Administrator**; MGW 2000e initializes.

   - If a network segment is DHCP enabled, TCP/IP settings are automatically defined for the associated NIC.

   - If a network segment is not DHCP enabled, refer to page 8 to define TCP/IP settings for the associated NIC.

2. Press any key; the Main menu appears.

To change MGW 2000e's hostname:

1. To avoid network conflicts, make sure that there are no other network devices with the name you want to use.

2. Press **1 (Rename MGW 2000e)**; you will be asked to confirm your request to change MGW 2000e's hostname.

3. Press **Y** to confirm the request.

4. Type the new hostname for MGW 2000e and press **Enter**. MGW 2000e's hostname changes. MGW 2000e only allows hostnames consisting of less than 15 characters.

5. Make a note of MGW 2000e's new hostname for future reference.

6. To return to the Main menu, press any key.

The following sections explain how to set network configurations for the connected NIC, if the respective network is not DHCP enabled.

Note

To ensure proper network communication, we recommend using shielded Category 5 network cables to connect MGW 2000e to the network.

If your Network is not DHCP enabled

If your network is not DHCP enabled, you must define TCP/IP settings for NIC A upon logging on for the first time. The following section instructs you on how to define TCP/IP settings.

To define TCP/IP settings:

1. In the Main menu, press **2 (Change Network Settings)**; the Network menu appears.

2. Press **1 (Change TCP/IP Settings for NIC A)**; DHCP options appear.

3. Press **2 (Disable DHCP and set TCP/IP parameters manually)**; DHCP is disabled and TCP/IP options appear.

4. Enter the new IP address and Subnet mask for NIC A and press **Enter**.

   - To make MGW 2000e accessible from outside your local network, define the Default Gateway and press **Enter**.

   - For instructions on defining TCP/IP settings for NIC B, refer to the user manual.

   The new parameters are defined and MGW 2000e returns to the Network menu once you press **Enter**.

5. To return to the Main menu, press **0 (Return to the Previous Menu)**.

To display TCP/IP settings:

1. To display MGW 2000e's TCP/IP settings, re-open the HyperTerminal connection and log on again as **Administrator**, the Main menu appears.

2. Type **3 (Display TCP/IP Settings)**; the TCP/IP settings are displayed.

3. To return to the **Main** menu, press any key.

To log off MGW 2000e:

1. In the Main menu, press **0 (Quit)**; you are notified that MGW 2000e will have to restart for the new settings to take effect.

2. Press any key; the connection is terminated and MGW 2000e restarts, which may take several minutes. MGW 2000e is available again when the Power LED turns green.

If you wish to log on again:

*   Re-open the HyperTerminal connection and enter the user name and password for **Administrator**; the Main menu appears.

Transmitting Streams

The following chapters show you how to operate MGW 2000e using MGW 2000e Director.

Logging on to MGW 2000e Director

1. Open Microsoft Internet Explorer from any computer on the network.

2. In the URL field, enter MGW 2000e's hostname or IP address. Internet Explorer's URL field will read something like the following:

   http://172.16.100.107/Director   or

   http://MGW2000E/Director

3. Press **Enter**; the MGW 2000e Director Logon page appears.

4. Log on as **Administrator**. The default password for this user is **Administrator**.

   • For instructions on changing the Administrator password, refer to the user manual.

5. Click **Login**; the Channels page appears.

Note

MGW 2000e Director has been optimized for Microsoft Internet Explorer 5.0 and higher.

Configuring a Live Channel

To access the Channels page, choose **Channels** in MGW 2000e Director's menu.

The Channels page displays a list of the available live channels corresponding to the number of encoding modules installed in the MGW 2000e chassis.

You have to configure the stream, source and target parameters for the live channel. This section instructs you on how to configure the required parameters.

Configuring Stream Parameters

1. Under **Control**, click **Properties** ; the Properties page appears displaying stream parameters.

2. Set **Color System** to **Auto Detect** and click **Apply**.

3. MGW 2000e detects the color system of your video source automatically.

4. Other parameters are set to default values and don't have to be adjusted. For detailed instructions and explanations on how to set the other parameters, refer to the user manual.

5. To return to the Channels list, click **Channels** in MGW 2000e Director's menu.

For a detailed description of the stream parameters, refer to the user manual.

Note

- MGE-100 encoding modules only support MPEG-1 settings. You will not be able to set MPEG-2 parameters for channels associated with MGE-100 encoding modules.

- If you are logged on as **MGW2000Guest**, the Properties button does not show.

Configuring Source Parameters

1. Click the Source tab; the Source page appears.

2. Under **Video Input**, choose the video source connected to the relevant encoding module and click **Apply**.

3. If you use an analog audio source, set **Audio Input** to **Unbalanced** and click **Apply**.
   If you have an MGE-200D encoding module installed and use a digital audio source, set **Audio Input** to **Digital Audio** and click **Apply**.

4. The other parameters are pre-set to default values and don't have to be adjusted. For detailed instructions and explanations on setting other parameters, refer to the user manual.

5. To return to the Channels list, click **Channels** in MGW 2000e Director's menu.

For a detailed description of the source parameters, refer to the user manual.

Note

If you want to choose **SDI** as video input, you have to encode from a digital video source and install an MGE-200D encoding module. For instructions on installing encoding modules and connecting peripherals, refer to the user manual.

Configuring a UDP Target

1. Click the Target tab; the Target page appears.

2. Select a UDP Target; UDP appears under **Target Type**.

3. Click **Add Target**; a default Multicast address is assigned and default parameters are set.

   - Confirm that your receiving PC belongs to the displayed Multicast address, otherwise you won't be able to play the stream.

   - Refer to your network administrator to obtain a valid Multicast address and enter it into the Target Address field.

4. To implement the settings, click **Apply**.

5. To return to the Channels list, click **Channels** in MGW 2000e Director's menu.

For a detailed description of target parameters and instructions on adding and configuring targets other than UDP, refer to the user manual.

Running a Channel

Once you have configured the channel, you can start transmitting a stream. Follow the instructions to transmit a channel.

MGW 2000e also lets you schedule a channel. For instructions on scheduling a channel, refer to the user manual.

To transmit a stream:

1. In MGW 2000e Director's Menu, click **Channels**. The Channels page appears.

2. From the Channels list, select the channel you want to transmit.

   If the Run Channels button is disabled [ ], no target has been added to the channel. To run this channel, you must first add a target as explained on page 13.

3. Click [ ], MGW 2000e Director transmits the channel. The Run Channel button [ ] now toggles to the Stop Channel button [ ].

4. Repeat steps 2-4 for each channel you want to transmit.

To stop transmitting:

- Click [ ]; the associated channel stops transmitting. The Stop Channel button [ ] now toggles to the Run Channel button [ ].

Note

If you are logged on as **MGW2000Guest**, the Run and Stop buttons do not show.

Previewing MPEG-1 UDP Streams

Playing back MPEG-1 UDP streams requires installing Optibase Player. For additional information, refer to the user manual.

To preview a MPEG-1 UDP stream:

1. On MGW 2000e Director's Main window, click **Channel Preview**; your currently configured channel appears.

2. Click **Select**; Optibase Player appears and the channel displays. The Select button is disabled, if the channel is stopped.

Hardware Overview

LEDs	Description	
Power	Off Blinks green Green	No power MGW 2000e is booting Power on
Alarm	Off Blinks red	No error At least one fan runs too slow or failed
Ethernet Link	Off Orange	No connection Connected
Ethernet Transmit	Off Flashes green	No transmission Transmitting
(Channel) 1-6	Off	Empty slot
	Blinks red (if module is inserted)	MGW 2000e is booting.
		Slot error (software not loaded)
	Green	Encoding module inserted and ready to encode
	Blinks green	Encoding
	Red	Encoding module inserted, channel error
		Certain errors may cause this LED to flash.

Table 3: MGW 2000e Front Panel LEDs

Ports	Description
Six slots	Accommodate up to six encoding modules.
Power connector	Connects power cord (90/260V AC).
Power switch	Switches MGW 2000e on and off.

Table 4: MGW 2000e Rear Panel Interface

Connectors	Description	
Audio	Connects analog audio source	
COMP.VID	Connects Composite video source	
S-VIDEO	Connects S-Video source	
LEDs	**Functionality**	
Source	Off	Bad or no video source
	Green	Video source detected

Table 5: MGE-100 and 200 Encoding Module Interfaces

Cable	Description
Video BNC	Connects Composite video source
S-Video MiniDIN	Connects S-Video source
Stereo MiniJack Audio	Connects analog audio source

Table 6: Cables connecting Sources to MGE-100/200 Encoding Modules

Connectors	Description	
ANALOG AUD	Connects analog audio source.	
DIG AUD	Connects digital audio source.	
SDI	Connects digital video source	

LEDs	Description	
Source	Off	Bad or no video source.
	Green	Video source detected.

Table 7: MGE-200D Encoding Module Interfaces

Cable	Description
Video BNC	Connects digital video source
RCA Coaxial	Connects digital audio source
Stereo MiniJack Audio	Connects analog audio source

Table 8: Cables connecting Sources to MGE-200D Encoding Modules

Technical Support

Optibase's Extended Warranty program is a support package for Optibase products and provides one to four years of warranty starting with the day of purchase. For more details and first-line support, contact the reseller or distributor who sold you your Optibase product.

The Optibase Knowledge Base offers technical tips and information about Optibase products. The Knowledge Base is available at **http://helpdesk.optibase.com/syshelp/logon.htm**

If you purchased your Optibase product directly from Optibase Inc., contact Optibase's technical support directly as follows:

Optibase Inc.

Tel: (800) 451 5101

Fax: (650) 691 9998

Software Updates

Software resources and updates are available for download at **http://www.optibase.com**.

Documentation

For errors or suggestions regarding this user manual, contact Optibase's documentation team directly at **documentation@optibase.com**

Warranty

Your Optibase product is warranted against defects in material and workmanship for a period of 12 months starting with the date of delivery. We will repair or replace (at our option) any part that proves defective during the warranty period, provided the entire unit is returned to Optibase by prepaid shipping in Optibase's original packing.

Note that you are only eligible for warranty, if your MGW 2000e unit carries a serial number on its rear panel. Your dated sales receipt or invoice proves the date you purchased the unit. Before returning your product for repair, contact our Customer Service department for a Return Materials Authorization (RMA) number. No unit will be accepted for repair without RMA number.

Neither Optibase Inc. nor Optibase Ltd. will be responsible for any damages resulting from the use, maintenance or installation of any Optibase product. Neither Optibase Inc. nor Optibase Ltd. will be responsible for the incorporation of any spare or replacement parts not approved by Optibase. Without limiting the generality of the foregoing, Optibase reserves the right to refuse warranty repair on any product that, in our opinion, has been subjected to any abnormal electrical, mechanical, or environmental abuse, or shows signs of modification by an unauthorized person or company. To assure coverage under this warranty, you must fax your Warranty Registration Fax-Back Sheet to Optibase, within 30 days of purchase of the product along with a copy of your sales receipt. Call your local distributor or reseller for out-of-warranty repair charge estimates prior to returning a product.

Serial Number:

Date of Purchase: